

USGS-NPS Vegetation Mapping Program

Isle Royale National Park

Picea mariana / Ledum groenlandicum / Sphagnum spp. Forest

COMMON NAME	Black Spruce / Labrador-tea / Peatmoss species Forest
SYNONYM	Black Spruce / Labrador Tea Poor Swamp
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Evergreen forest (I.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar needle-leaved evergreen forest (I.A.8)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.A.8.N)
FORMATION	Saturated temperate or subpolar needle-leaved evergreen forest (I.A.8.N.g)
ALLIANCE	PICEA MARIANA SATURATED FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM TERRESTRIAL

RANGE

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This community is uncommon, and scattered throughout the park.

Globally

This community is found in northern Michigan, northwestern Ontario, northern Minnesota, northern Wisconsin, and southeastern Manitoba. This community is rare in Michigan.

ENVIRONMENTAL DESCRIPTION

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This community occupies wet depressions at elevations ranging from 610 feet (just a few feet above Lake Superior lake level) to 990 feet. Soils are saturated peat or muck.

Globally

This type is found in confined peatland basins, on the upland margins of large peatlands, in poorly drained depressions in bedrock, and removed from the water's edge on peatland shorelines (Harris *et al.* 1996). Stands occur on level, wet sites with organic soils (Zoladeski *et al.* 1995). The substrate is deep, acidic Sphagnum peat that is mineral poor (Kurmish *et al.* 1986). Hummock and hollow microtopography is moderately to well developed. The water regime is saturated.

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Picea mariana</i>
Short shrub	<i>Ledum groenlandicum</i>
Graminoid	<i>Carex trisperma</i>
Nonvascular	<i>Sphagnum</i> spp.

Globally

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CHARACTERISTIC SPECIES

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Picea mariana, *Ledum groenlandicum*, *Carex trisperma*

Globally

Picea mariana, *Ledum groenlandicum*, *Carex trisperma*, *Sphagnum* spp.

VEGETATION DESCRIPTION

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This black spruce poor swamp is an open canopy, evergreen wooded swamp, typically with 20 to 50% cover of trees over 5 m tall. *Picea mariana* (with 25 to 50% cover), *Larix laricina* (with 1 to 5% cover), and *Betula papyrifera* (1 to 5% cover) are the most abundant trees. Cover of tall shrubs varies from about 5 to 30%; the most abundant tall shrubs are *Picea mariana* (1 to 25% cover) and *Larix laricina* (0 to 5% cover). Cover of short shrubs is variable, ranging from 5 to 90%. The most abundant short shrubs (including dwarf shrubs) are *Chamaedaphne calyculata* (5 to 90% cover), *Ledum*

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groenlandicum (5 to 25% cover), and *Abies balsamea* (0 to 25% cover). Herb cover varies from about 20 to 70%. The most common herbs are *Carex oligosperma*, *Carex trisperma*, *Calamagrostis canadensis*, *Maianthemum trifolium*, *Sarracenia purpurea*, and *Symplocarpus foetidus*. Cover of *Sphagnum* spp. ranges from 5 to 90%.

Globally

The overstory of this community is dominated by conifers. The tree canopy is broken to closed over a moderately well developed low shrub layer, sparse herbaceous layer, and a carpet of mosses (Kurmish *et al.* 1986). The canopy is often pure *Picea mariana*, but *Larix laricina* may be a codominant. *Abies balsamea* can be present to codominant, and the occasional *Pinus banksiana* may occur (Sims *et al.* 1989). The shrubs are primarily ericaceous and include *Chamaedaphne calyculata*, *Gaultheria hispidula*, *Kalmia polifolia*, *Ledum groenlandicum*, and *Vaccinium* spp, but mixed spruce-tamarack stands can contain *Alnus incana* or *Betula glandulosa*. The few herbaceous species found in this community include *Carex lasiocarpa*, *Carex trisperma*, *Clintonia borealis*, *Coptis trifolia*, *Cornus canadensis*, and *Maianthemum trifolium*. Occasional minerotrophic indicators found in northern Minnesota include *Carex lacustris*, *Iris versicolor* and *Monotropa uniflora* (M. Smith personal communication 1999). Mosses, particularly *Sphagnum* spp. typically cover nearly 100% of the forest floor. *Dicranum polysetum*, *Sphagnum* spp. (including *Sphagnum magellanicum*, *Sphagnum recurvum sensu lato*, *Sphagnum capillifolium*, *Sphagnum russowii*), and *Pleurozium schreberi* are among the species found in this abundant moss layer (Sims *et al.* 1989, Harris *et al.* 1996).

OTHER NOTEWORTHY SPECIES

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Information not available

CONSERVATION RANK G5.

DATABASE CODE CEG002454

MAP UNITS 25

COMMENTS

REFERENCES

- Harris, A. G., S. C. McMurray, P. W. C. Uhlig, J. K. Jeglum, R. F. Foster, and G. D. Racey. 1996. Field guide to the wetland ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources, Northwest Science and Technology, Thunder Bay, Ontario. Field guide FG-01. 74 p.
- Janssen, C. R. 1967. A floristic study of forests and bog vegetation, northwestern Minnesota. Ecology 48(5):751-765.
- Kurmish, V., S. L. Webb, and L. C. Merriam. 1986. Plant communities of Voyageurs National Park, Minnesota, U.S.A. Can. J. Bot. 64:531-540.
- Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: A key to natural communities. Ver. 1.5. Minn. Dep. Nat. Resour., Nat. Heritage Prog. St. Paul, Minn. 110 p.
- Sims, R. A., W. D. Towill, K. A. Baldwin, and G. M. Wickware. 1989. Field guide to the forest ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources.
- Zoladeski, C. A., G. M. Wickware, R. J. Delorme, R. A. Sims, and I. G. W. Corns. 1995. Forest ecosystem classification for Manitoba: field guide. Natural Resources Canada, Canadian Forest Service, Northwest Region, Northern Forestry Center, Edmonton, Alberta. Special Report 2.